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ABSTRACT

In northeast Texas, 47% of the adults over the age of 25 have not graduated from high school. Area agricultural businesses are rapidly implementing new technologies and quality control measures, both of which require literate and highly trainable workers. To meet these needs, a partnership project was undertaken between Northeast Texas Community College (NTCC) and the Northeast Texas Quality Work Force Planning Committee ("Vision-NeT") aimed at enhancing workplace literacy in targeted agricultural industries and occupations. The four goals of the project were to identify industries and occupations with high employment demands; conduct a literacy audit of employees at selected businesses to determine the relationship between workplace literacy and productivity; integrate the results of the literacy audit into the existing Agriculture 2 + 2 (Tech-Prep) and literacy programs; and disseminate the findings of the literacy audit at a Vision-NeT quarterly symposium. Using a labor market information system, three key industries with high projected employment demand were identified (i.e., food and kindred products, agricultural production-livestock, and forestry) and a prioritized list of target occupations was developed. A literacy audit of area poultry businesses led to the development of a literacy and occupational skills matrix for use in determining the training needs of specific occupations on-site, as well as to evaluate and improve occupational education curricula. Finally, as a result of attending the Vision-NeT symposium, Lonestar Steel, together with a local union, entered into a training partnership with NTCC which is currently providing workplace literacy classes to 35 employees/members. Recommendations included: (1) enhance communications between business and education by avoiding "educationese"; (2) business and education must reach consensus on the definition of basic skills; (3) a more workable taxonomy of basic workplace skills should be developed; (4) where possible inventories of job duties and tasks should be used to focus literacy audits; (5) community and junior colleges should use a team approach to literacy audits; and (6) in-service training should be provided to community and junior college staff on conducting literacy audits. (PAA)

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NORTHEAST TEXAS AGRICULTURAL LITERACY NETWORK

(A-Lit-NeT: A Rural College Partnership Project)

FINAL REPORT

by

John Carnes, Ph.D.

Sponsored Cooperatively by

The American Association of Community and Junior Colleges

and

Northeast Texas Community College

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EXECUTIVE SUMMARY

Introduction

This report describes the procedures and presents the results of the Agricultural Literacy Network (A-Lit-NeT) project sponsored by the American Association of Community and Junior Colleges (AACJC) Commission on Small and Rural Community Colleges. A-Lit-NeT was conducted by Northeast Texas Community College (Northeast), with the cooperation of the Northeast Texas Quality Work Force Planning Committee (Vision-NeT).

The project planned and implemented a business/education partnership aimed at enhancing workplace literacy in targeted agricultural industries and occupations. Northeast and Vision-NeT were concerned that technical skill development alone is not sufficient to meet the challenge of preparing the region's growing population and labor force for the jobs that will be available in the future. To remain competitive, business and industry are rapidly implementing new technology and quality control measures. Both of these trends require a worker who is literate, and thus highly trainable. Given limited resources, literacy education efforts must focus on essential workplace needs in order to best meet the training requirements of business and industry.

Procedures and Results

The A-Lit-Net project included four goals designed to link workplace literacy education with the training requirements of business and industry:

I. Identify industries and occupations to target businesses with high employment demand.

   The SOCRATES Labor Market Information System was used to identify key regional agriculture related industries and occupations. The lists were validated by the Vision-NeT Program Planning Subcommittee, the A-Lit-NeT Literacy Task Force, and the Texas Employment Commission.

II. Conduct a literacy audit at a selected business.

The A-Lit-NeT Literacy Task Force recommended that the poultry production and poultry processing industries and the occupations of firstline supervisor and assistant manager be targeted for further review. Members of the A-Lit-Net Literacy Task Force referred project staff to two area poultry businesses. A literacy audit was conducted.

III. Integrate the results of the literacy audit in the existing Agriculture 2+2 and literacy programs.

A literacy skills taxonomy (compatible with the classes and services offered by the Developmental Education Department at Northeast) was compiled from a variety of sources. The literacy skills and the occupational skills inventory for poultry production and processing occupations were arranged in a matrix. The matrix was then used to organize and analyze the data collected during the activities conducted in Goal II. Technical assistance was provided to integrated the results into the existing Agricultural 2+2 and Developmental Education Department curricula.

IV. Disseminate the findings of the literacy audit at a quarterly Vision-Net symposium.

In conjunction with regular quarterly meeting of the Vision-NeT committee, Vision-Net sponsors a regional symposium. To stimulate the "buy-in" of local leadership to the activities of the A-Lit-Net Literacy Task Force, the Spring symposium featured the A-Lit-NeT project.

Recommendations

- Enhance communications between business and education by avoiding "educationese."
- Business and education must reach consensus on the definition of basic skills.
- A more workable taxonomy of basic workplace skills.
- Where possible inventories of job duties and tasks should be used to focus literacy audits.
- Community and junior colleges should use a team approach to literacy audits.
- In-service training should be provided to community and junior college staff on conducting literacy audits.

INTRODUCTION

This report describes the procedures and presents the results of the Agricultural Literacy Network (A-Lit-NeT) project sponsored by the American Association of Community and Junior Colleges (AACJC) Commission on Small and Rural Community Colleges. A-Lit-NeT was conducted by Northeast Texas Community College (Northeast), with the cooperation of the Northeast Texas Quality Work Force Planning Committee (Vision-NeT). The project planned and implemented a business/education partnership aimed at enhancing workplace literacy in targeted agricultural industries and occupations. Prior to describing the project procedures and results, profiles of the region and the project partners and a summary of the project need and goals are presented.

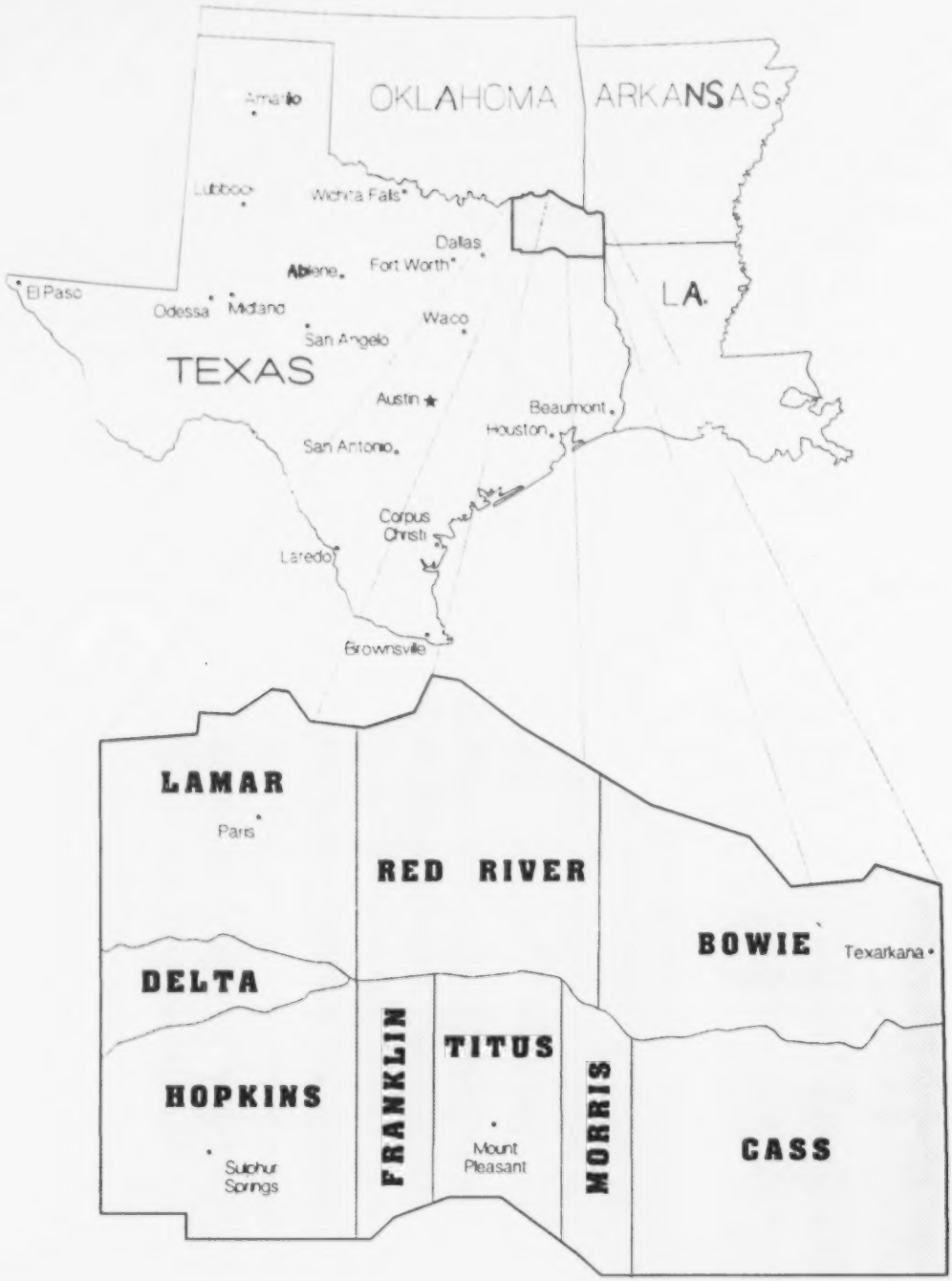
The Northeast Texas Region

The region is composed of nine counties in the northeast corner of Texas (Bowie, Cass, Delta, Franklin, Hopkins, Lamar, Morris, Red River, and Titus). A map of the Northeast Region appears on the following page.

Since a downturn in the steel, oil and gas, and agriculture industries during the early 1980's, a negative "ripple effect" has spread economic difficulty throughout the vast majority of businesses in northeast Texas. During the middle 1980's, the business climate was characterized by reduction and closure. High paying, low-skill jobs that were once common in a local steel mill, the "oil patch" and in related businesses are no longer available. The region is presently in a transition from dependence on industries that "harvested" natural resources to industries that add value to those resources. Business and industry have expressed a dire need for employees that can master new technologies and continuously solve problems related to quality control.

Long-term economic depression has had a negative impact on the quality of life in northeast Texas. In 1990, the region's unemployment rate of 6.3 percent compared favorably to the state average of 6.2 percent. Pockets of high unemployment do exist. In particular, Morris county's 1990 unemployment rate was 13.6 percent. Unemployment data, however, do not reveal the entire picture.

The Northeast Texas Planning Region



Income data reveal a closely related and significant trend. Prior to the 1980s, the region consistently ranked above the state average for per capita income. In 1990, the region lagged behind the state by almost 16% in per capita income. In addition, the current estimate of families with incomes below the poverty level is 18.6%. These data suggest that although unemployment has eased recently, many of those employed are working in lower paying jobs. Many of the regions residents who were previously members of prosperous households can now be classed among the "new poor."

Given past high-paying jobs that required few skills, many of citizens did not emphasize education. Census data (1980) reveal that 47 percent of the northeast Texas residents over 25 years of age have not graduated from high school. A recent survey of students at Northeast revealed that 25 percent come from families where neither parent graduated from high school. The same survey showed that 85 percent were from families where neither parent completed college.

The A-Lit-Net partnership will positively impact the region. Overall, the region's population grew 4.7 percent and the region's labor force increased 15.6 percent during the past decade (1980 Census and 1990 Census). The challenge A-LIT-NeT was formed to address is preparing the growing population and labor force for the jobs that will be available in the future.

Northeast Texas Community College

Northeast Texas Community College (Northeast) is a public supported two-year community college located in rural northeast Texas. Northeast is isolated from urban resources. It is located near the town of Mount Pleasant--125 miles east of Dallas and 75 miles north of the Tyler/Longview metropolitan statistical area. See the map on the previous page for the exact location..

Northeast offers over 25 courses of study designed for transfer through the Associate of Arts and Associate of Science degrees. The Associate of Applied Science degree includes 16 courses of study. Twenty-six certificate programs are offered in eleven occupational areas. The Developmental Education Department conducts a wide variety literacy classes and related support services. Northeast has enjoyed growth in enrollment every year since it was founded in 1984. Current enrollment (Fall 1991 head count) is about 1,800 students.

Vision-NeT (Northeast Texas Quality Work Force Planning)

Vision-NeT is one of 24 regional planning units designated by the Texas Legislature. Quality Work Force Planning is a state initiative supported by the Texas Higher

Education Coordinating Board, Texas Education Agency, and Texas Department of Commerce. Locally, Vision-NeT staff are supported by a partnership of 15 private sector and 15 public sector representatives from the nine county Northeast Texas Planning Region. Vision-NeT has the responsibility of compiling and sharing labor market and other planning information and providing technical assistance to all educational entities in planning vocational-technical and related (literacy) programs. This joint planning process promotes a comprehensive "safety net" of services to improve work force quality in support of economic development.

The A-Lit-NeT Literacy Task Force

Northeast and Vision-NeT have linked particularly well with agribusiness to identify labor demand, target employer training needs, and to develop curricula based on employer performance standards. Northeast and Vision-NeT recently concluded the Northeast Texas Work Force Development--Food and Fiber Project. The "Food and Fiber Project" identified the regional labor market demand and training needs among small and medium sized agribusinesses in four areas of agriculture (fruit and vegetable production, food processing, forestry, and horse production).

Northeast is currently implementing the Agriculture Science and Technology 2+2 (Tech-Prep) curricula in four occupational areas in agriculture (dairy production and processing, poultry production and processing, forestry, and energy and environmental technology in agriculture). The focus of the "Agriculture 2+2 Project" is to identify occupations based on labor demand, target duties and tasks for occupations with significant potential for employment, and develop competency-based curricula that meet employer standards of performance.

Northeast and Vision-NeT were concerned that technical skill development alone is not sufficient to meet the challenge of preparing the region's growing population and labor force for the jobs that will be available in the future. Before the large portion of the work force who are illiterate can be trained or re-trained, they must master basic academic skills. To address this concern the A-Lit-NeT Literacy Task Force was formed. Membership was drawn from the advisory committees of the Food and Fiber and Agriculture 2+2 projects as well as individuals with expertise in literacy education.

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Need

A need for literacy training for incumbent workers is well documented. To remain competitive, business and industry are rapidly implementing new technology and quality control measures. Both of these trends require a worker who is literate, and thus highly trainable. While Northeast offers a variety of basic skills classes to educate the high proportion of residents who lack the necessary basic skills, incumbent workers are usually unable to attend literacy classes. Thus, there is a gap in the literacy services provided to the residents of northeast Texas. There is a need for literacy training geared to the workplace.

In particular, agribusiness industries of rural northeast Texas are experiencing qualified work force shortages. There are a surplus of low-skill workers, but a shortage of skilled and highly trainable (literate) workers in the region.

Rationale

Business and industry, especially in rural areas, are struggling for their very survival. Many voice the concern that the time required to train or re-train illiterate employees in technical subject matter limits productivity. Some employers even feel that illiteracy can be linked to high rates of turnover, absenteeism, and other employment related problems. Still, most employers hesitate to become involved in activities that detract from their financial reports. They want a clear picture of just how a proposed literacy education program will pay-off at some point in the future.

Employee time spent in the classroom should be cost-effective for the employer. Employer commitment to workplace literacy is enhanced when a relationship is demonstrated between worker literacy and workplace productivity. Literacy-in-the-workplace education programs must be customized to the needs of individual employers to maximize the effectiveness of time spent in the classroom.

If more were known about specific, on-the-job literacy requirements, the efficiency and effectiveness of instruction could be greatly improved. Some important questions must be answered. What grade level of literacy is required for effective job performance? What types of technical materials must be read and understood? What forms must be completed accurately? Are there areas of mathematics that need to be emphasized? How well must employees communicate orally and in writing.

Without evidence in regards to essential workplace needs, workplace literacy education takes a "shotgun" approach at best. Given limited resources, literacy education efforts must focus on essential workplace needs in order to best meet the training requirements of business and industry.

The A-Lit-Net project included four goals designed to link workplace literacy education with the training requirements of business and industry:

I. Identify industries and occupations to target businesses with high employment demand.

II. Conduct a literacy audit at a selected business (or consortium of small and medium-sized businesses) to determine the relationship between workplace literacy and productivity, and identify critical job literacy requirements.

III. Integrate the results of the literacy audit in the existing Agriculture 2+2 and literacy programs to enhance the efficiency and effectiveness of technical skills training and literacy education.

IV. Disseminate the findings of the literacy audit at a quarterly Vision-Net symposium to stimulate private sector leadership.

REPORTING FORMAT

The report that follows outlines the accomplishments attained, and the problems encountered while conducting the A-Lit-Net project. This report is organized by the project goals. Reporting is accomplished by stating each goal and presenting the procedures and results. The final recommendations section summarizes the project results, findings,and conclusions.

GOAL — 1

Identify industries and occupations to target businesses with high employment demand.

Procedures

Key Regional Industries List

The SOCRATES Labor Market Information System (LMIS) was used to identify key regional agriculture related industries. Similar systems are available in other states from the State Occupational Information Coordinating Committee (SOICC). SOCRATES uses labor market data from a a variety of sources to rank industries in terms of actual and potential employment. The list was validated by the Vision-NeT Program Planning Subcommittee, the A-Lit-NeT Literacy Task Force, and the Texas Employment Commission.

The SOCRATES LMIS was also used to target occupations in key industries. To ensure that appropriate occupations were selected, selection criteria were used to "filter-out" occupations inappropriate to the project. The filtered occupations were then prioritized based upon the projected employment level expected in 1995. The occupational selection criteria appear below.

- Annual average job openings greater than 200
- Training time from six months to two years
- Combined growth and turnover rates greater than 20 percent
- Average or greater education requirement
- Wage rate of $5.00 or more
- One percentage or greater growth to 1995
- Absolute change in the number of jobs to 1995 greater than 200

The A-Lit-Net Literacy Task Force reviewed the list of occupations within the key industries. A prioritized list of target industries and occupations resulted. Employment demand was verified with the Texas Employment Commission.

Results

The prioritized list of key industries for the A-Lit-NeT project appears below.

- Food and Kindred Products
- Agricultural Production-Livestock
- Forestry

The prioritized list of target occupations for the A-Lit-NeT project appears below

- Firstline Supervisor, Food Processing
- Assistant Manager, Livestock Production
- Forestry Technician
- Repairer
- Maintenance Mechanic
- Manager, Food Processing
- Manager, Livestock Production
- Machine Feeder, Food Processing
- Meat and Poultry Cutter
- Packaging Machine Operator
- Production Assembler and Fabricator
- Freight and Stock Mover, Food Processing
- Laborer/Helper, Livestock Production

The A-Lit-NeT Literacy Task Force recommended that the poultry production and poultry processing industries and the occupations of firstline supervisor and assistant manager be targeted for further review. It was stressed, however, that the occupational analysis to follow should not be too narrow. Businesses in the poultry industry are often vertically integrated with some control of all phases of production and processing. Poultry companies, therefore, requires supervisors and managers with a broad knowledge of the entire industry.

GOAL — II

Conduct a literacy audit at a selected business.

Procedures

Members of the A-Lit-Net Literacy Task Force referred project staff to two area poultry businesses. Staff made preliminary visits to explain the purpose and procedure of a literacy audit. During these meetings, it was agreed that the following preliminary steps would be most effective in conducting the audit:

- Observe firstline supervisory employees in processing plants and assistant managers in production farms at work to determine the literacy skills used on-the-job.
- Collect materials that are written and/or read on-the-job
- Interview employees and supervisors concerning their perceptions of the literacy skills needed on-the-job

After conducting the audit, project staff met with the A-Lit-Net Literacy Task Force to discuss the preliminary audit and ways to organize and analyze the data collected.

Results

Pilgrims Pride Corporation and Tyson Food, Incorporated were recommended by the task force as desirable sites for the literacy audit. The task force further recommended that a literacy skills taxonomy that is compatible with the classes and services offered by the Developmental Education Department at Northeast be developed. The task force also recommended that the occupational inventory for poultry production and processing occupations developed by the Agriculture 2+2 Project be used to crosswalk the literacy skills taxonomy to the occupations. Both of these recommendations were incorporated in the activities of Goal III.

GOAL — III

Integrate the results of the literacy audit in the existing agriculture 2+2 and literacy programs.

Procedures

A literacy skills taxonomy (compatible with the classes and services offered by the Developmental Education Department at Northeast) was compiled from a variety of sources (see reference list). The literacy skills and the occupational skills inventory for poultry production and processing occupations were arranged in a matrix. The literacy skill were listed across the top of the matrix and the technical skills down the left hand side. The matrix was then used to organize and analyze the data collected during the activities conducted in Goal II.

Results

The Northeast Professional Development Program conducted a workshop which was attended by six community colleges in the northeast and east Texas regions that used the A-Lit-NeT procedures and results as an example of integrating occupational and academic skills. The Agriculture 2+2 Project used the matrix to emphasize appropriate academic skills in its articulated curriculum. The Developmental Education Department at Northeast will used the A-Lit-NeT project results as the basis for a workplace literacy proposal to the U.S. Department of Education. The workplace literacy proposal will include agriculturally related and other major industries in the region as partners.

Examples of the matrix are included in a companion document entitled: " A Handbook for Customizing Workplace Literacy to Employer Training Needs."

GOAL — IV

Disseminate the findings of the literacy audit at a quarterly vision-net symposium.

Procedures

Six activities were used to disseminate the findings of the A-Lit-NeT project.

- Project staff participated in an American Association of Community and Junior Colleges (AACJC) sponsored national teleconference entitled "Rural Workplace Literacy: Making Partnerships that Work."
- The A-Lit-NeT project was featured in the Winter edition of CONTACT (the Vision-NeT quarterly newsletter) in an effort to raise the awareness of business leaders of the importance of literacy training and motivate them to support A-Lit-Net's efforts. CONTACT is mailed directly to 600 entities in the northeast Texas region. Nine hundred additional copies are distributed through area chambers of commerce.
- A-Lit-Net staff presented the project findings to the Agriculture 2+2 advisory committee. Technical assistance was provided to the Agriculture 2+2 Project staff in integrating the A-Lit-Net findings into the articulated 2+2 curriculum.
- The A-Lit-Net findings were reported to the Vision-NeT Special Populations Subcommittee (adult and youth programs) to show literacy skills critical to workplace productivity.
- In conjunction with regular quarterly meeting of the Vision-NeT committee, Vision-Net sponsors a regional symposium related to some aspect of work force improvement or economic development. To stimulate the "buy-in" of local leadership to the activities of the A-Lit-Net Literacy Task Force, the Spring symposium featured a local down-link of a national teleconference on workplace literacy entitled "Work Force 2000: Workplace Literacy." The teleconference was sponsored in Texas by the Texas Employment Commission and locally by the Job Service Employer's Committee (JSEC), A-Lit-NeT, and Vision-NeT.
- This final project report was prepared to describe the project methodology and findings, and make recommendations for future workplace literacy efforts at

Northeast. It includes an executive summary report which will be disseminated to interested entities through Vision-NeT. In addition, a companion document entitled "A Handbook for Customizing Workplace Literacy to Employer Training Needs" was developed and accompanies this final report. The handbook is designed for practitioners and will be made available on a cost recovery basis.

Results

In addition to wide dissemination of A-Lit-NeT findings, the activities associated with Goal IV resulted in a final project report, executive summary report, and the how-to-manual.

Another tangible results that "spun-off" of the A-Lit-NeT project was the implementation of a workplace literacy program at Lonestar Steel, Incorporated. The training director at Lonestar Steel attended the Spring Vision-NeT symposium. As a result, Northeast, Lonestar Steel, and the United Steel Workers Local formed a partnership and are currently providing workplace literacy classes to 35 employees/members. In summary, Lonestar Steel provides the instructional equipment and supplies, the Union provides facilities, and Northeast provides instructional staff. Plans are currently underway to conduct a thorough occupational analysis and literacy audit of staff and firstline supervisory positions at Lonestar Steel to build a comprehensive training program customized to employer needs.

RECOMMENDATIONS

The A-Lit-Net project allowed Northeast to develop strategies for building partnerships with area businesses and industries. Future efforts in this area will be guided by the following recommendations:

- Every effort must be made to enhance communications between business and education. All discussion with business persons should be in conducted in business terms avoiding "educationese."
- Business and education must reach consensus on the definition of basic skills. Business persons increasingly consider subject matter areas such as interpersonal skills, intermediate mathematics, and science as basic workplace skills.
- A more workable taxonomy of basic workplace skills that includes subject matter areas such as interpersonal skills, intermediate mathematics, and science should be developed.
- Where possible inventories of job duties and tasks should be used to focus literacy audits on the specific training needs of employers. A matrix of technical tasks and basic skills proved very useful in compiling and analyzing data obtained during the literacy audit. In retrospect, the matrix should have been used to guide the audit as well.
- Community and junior colleges should use a team of vocational-technical, academic, and developmental education staff in identifying the basic skills content of jobs.
- An on-going partnership between business and education should periodically reassess the literacy content of jobs. Business can use this information to establish entry level and promotion requirements.
- Educators should strive to communicate to employers in unambiguous terms the return on investment of workplace literacy programs.
- In-service training should be provided to community and junior college staff on conducting literacy audits and integrating the results into both academic and vocational-technical training programs.

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